REMARKS

In the Summary, the Examiner notes that claims 1-15 are pending and that claims 1-15 are rejected. Applicant responds to the various paragraphs in the Office Action as set forth below.

Paragraph 1

No response is required to the acknowledgement of receipt of the oath and drawings.

Paragraph 2

The Examiner, in paragraph 2 objected to the drawings in that reference number 14 was inadvertently omitted from the formal drawings submitted 29 March 2004. Applicant submits herewith, in both redlined and clean versions, new drawing sheets correcting the omission. The correction to Fig. 1 includes element numbering for element 14.

In addition, Applicant has provided correction by adding the global designator 10 to Figs. 2, 3 and 4. Redlined and clean drawing pages are provided for these figures, as well. Although there are no changes to the remaining figures, clean pages are submitted for the entire drawing set.

Paragraph 3

The Examiner objected to the drawings on the baisis of question marks appearing in Fig. 2 in the formal submission. This has been corrected by amending Fig. 2 to replace "??" with 40, (and with the aforementioned correction of changing the global designator form 40 to 10 in the same figure). Redline and clean versions of this are submitted herewith.

Paragraph 4

The Examiner has objected to the subject matter of claims 3 and 15 as being without antecedent basis. Applicant asserts that this is an oversight by the Examiner. The specification, at page 11 lines 8-9, clearly calls out the limitation on the angle of incidence, as referred to in claims 3 and 15. In order to conform more closely to the wording in the specification, Applicant

has amended claim 3 to read "0° to 45°". It is submitted that this explanation and amendment overcomes the objection raised in Paragraph 4.

It is noted that Applicant ahs also made some corrective amendments to claims 7, 10, 11 and 15. These amendments deal with typographical matters only and do not affect the subject matter of the claims.

Paragraph 5

No response is required to the recitation of statutory basis.

Paragraph 6

The Examiner rejects claims 1-11, 13 and 14 as being anticipated by Du Bois (US Patent No. 2,516,966). Applicant respectfully disagrees. It is asserted, to the contrary, that the structure and teachings of Du Bois are inapposite to the present invention.

Applicant's invention is a disk for use in a brake system having brake pads axially engaging the disk (claim 1, lines 1-2) and where the protruding segments (of the brake disk) are adapted for physically engaging the brake pads (claim 1, lines 9-10, lines 7-8 prior to amendment). Similarly, in claim 8, Applicant recited structure relates to a braking system including brake pads for engaging the surface of a brake disk where the brake pad engaging surface of the brake disk is provided with alternating protruding segments for engaging the brake pads.

The structure and teaching of Du Bois are very significantly different in that the "segments" of Du Bois are the brake pads, not part of the brake disk. In columns 1-3 of Du Bois it is clear that the teachings relate to the "friction elements" or "lining" which are intended to wear away during usage. These are the pads of the brakes. Du Bois does not discuss the specific manner in which these are to be used, but it would be known to those in the art that the pads would be used as pads in connection with a drum, plate or disk and would wear down during usage. Thus, the Du Bois lining sections 18 are the pad components. Further, although it is not clear form the disclosure of Du Bois, it is reasonably understood that the disc 12 of Du Bois is a stationary element against which rotating surfaces are engaged to provide friction and braking.

Besides being a completely different element with a different purpose than the brake disk claimed by Applicant, the lining segments 18 of Du Bois have entirely different concerns associated therewith than do the brake disks of Applicant. The present invention is intended to reduce weight/mass of the brake disk and further to provide air flow for cooling. These concerns are much different for the pads (lining sections) of Du Bois where the material wears down and providing cooling and air flow is irrelevant. Concerns of weight are also irrelevant to Du Bois, as the Du Bois structure does not rotate and extra weight will not affect the tires or wheels, as it will in Applicant's structure.

Applicant asserts that the teachings of Du Bois clearly do not anticipate the subject matter of Applicant's claims, since recited elements (segments for engaging the brake pads) are totally missing in Du Bois and because the entire purpose and structure of Du Bois is different from that of Applicant. In this light, the rejection under § 102 is inappropriate and should be withdrawn.

Paragraph 7

In paragraph 7, the Examiner takes the position that claims 1-4, 6-10 and 12-14 are anticipated by Garfinkel (US Patent No. 6,536,564). Applicant has addressed this rejection by amending claims 1 and 8 as shown above. These, the only independent claims, are amended to include a further restriction which sets Applicant's invention completely apart from the teachings of Garfinkel.

Applicant has amended claims 1 and 8 to recite the limitation that the disk plane lies within the material of the disk throughout the intersection. This limitation is set forth in the specification at page 9, lines 2-5 and shown as **26** in Figs. 2 and 4. This sets Applicant's disks completely apart from those of Garfinkel, where a similar bisecting disk plane would intersect patches of air in the flow channels (230, etc.) which lie between the contact surfaces. The Garfinkel structures do not have a central disk plane, or center of mass ring, since the Garfinkel rotors are intended for significantly different uses than are those of Applicant.

It is noted that only a few of the embodiments of Garfinkel (Figs. 6 and 7) even use the illustrated element directly as a brake disk (rotor). The other illustrations use a flat surface mounted on the outside of the rotor and the pad contacting surface. In any event, the Garfinkel rotors are mounted to as to be offset from the effective disk plane. They do not have a need for

the structural integrity and rigidity necessary for Applicant's principal uses. Garfinkel's teaching is directed to air flow cooling to the interior of the rotor elements. Applicant's disk members do not even have an interior as such.

Applicant's structure provides a continuous ring, including the disk plane 26. This continuous metallic ring provides rigidity in the circumferential direction. This particularly enhances performance when engaging the brake pads, as Applicant's structure is highly resistant to any twisting and torque effects resulting from engagement with the pads. To the contrary, the Garfinkel zigzag cross section is subject to a degree of "squeezebox" deformation during engagement, which can induce vibrations and instability during braking. These would be unacceptable in high performance applications, such as with racing motorcycles. Applicant's structure avoids such vibrations and instabilities and provides consistent high quality braking under high stress conditions.

Although, as originally written, the structures of Garfinkel might have technically fallen within the wording of Applicant's claims, it is submitted that, as amended, this is no longer the case. Further, since the structures are clearly much different in construction and application, it is clear that the teachings of Garfinkel are, at most, marginally relevant to Applicant's invention. Accordingly, it is submitted that the rejections based on Garfinkel are no longer appropriate and should be withdrawn in light of the amendments.

Paragraph 8

No response is required to the recitation of statutory basis.

Paragraph 9

The Examiner applied a rejection of claim 15 based on a conclusion of obviousness under §103. Applicant contests this position on the basis that the claim has been amended (through amendment of base claim 8), to include an additional limitation which is neither taught nor made obvious by Garfinkel. Further, Applicant asserts that the overall structure claimed by Applicant, as well as the recited limitations of the dependent claims, are not at all obvious in light of Garfinkel and the other cited art. Applicant discloses and claims a unique and novel approach to brake disk construction, which is clearly nonobvious in light of all prior art teaching. As a result,

applicant asserts that the rejection under §103 should be withdrawn and should not be reasserted in the future against the present invention.

Paragraph 10

Applicant acknowledges the citation of addition art, not made of record.

Conclusion

Having responded to all of the paragraphs of the Office Action and having amended the claims accordingly, Applicant respectfully submits that the Application is now in condition for allowance. Applicant therefore respectfully requests that a Notice of Allowance be forthcoming at the Examiner's earliest opportunity. Should the Examiner have any questions or comments with regard to this amendment, a telephonic conference at the number set forth below is respectfully requested.

Respectfully submitted,

Date: 12 October 2004

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Octobr 12, 2004
(date)

(Signature of Patricia Beilmann)

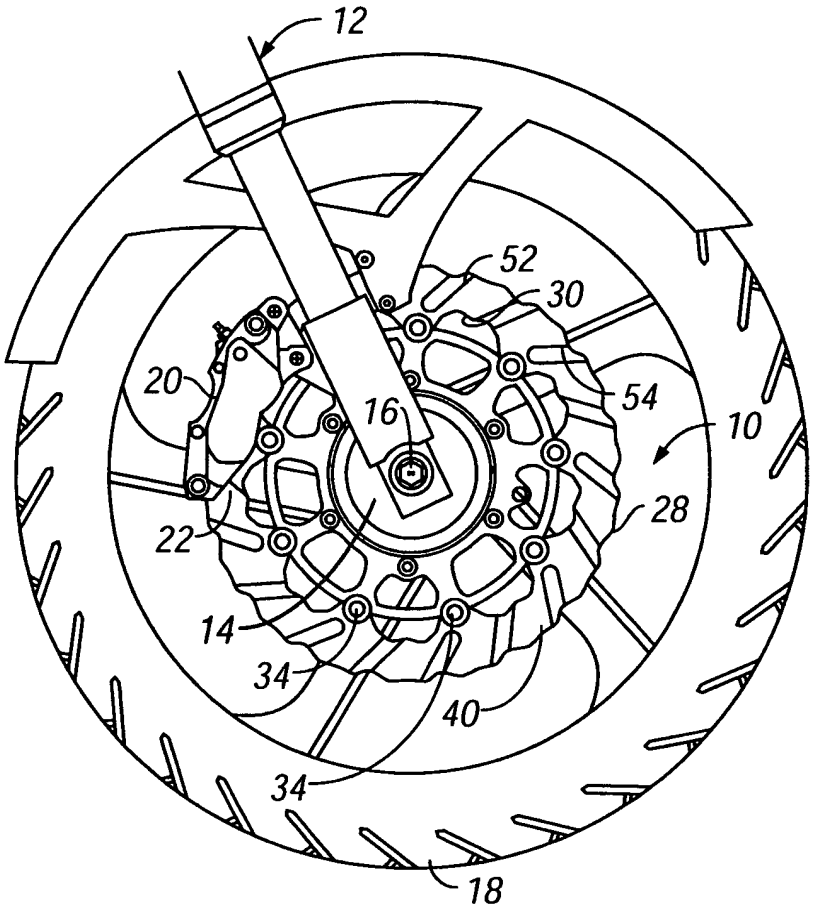

FIG. 1

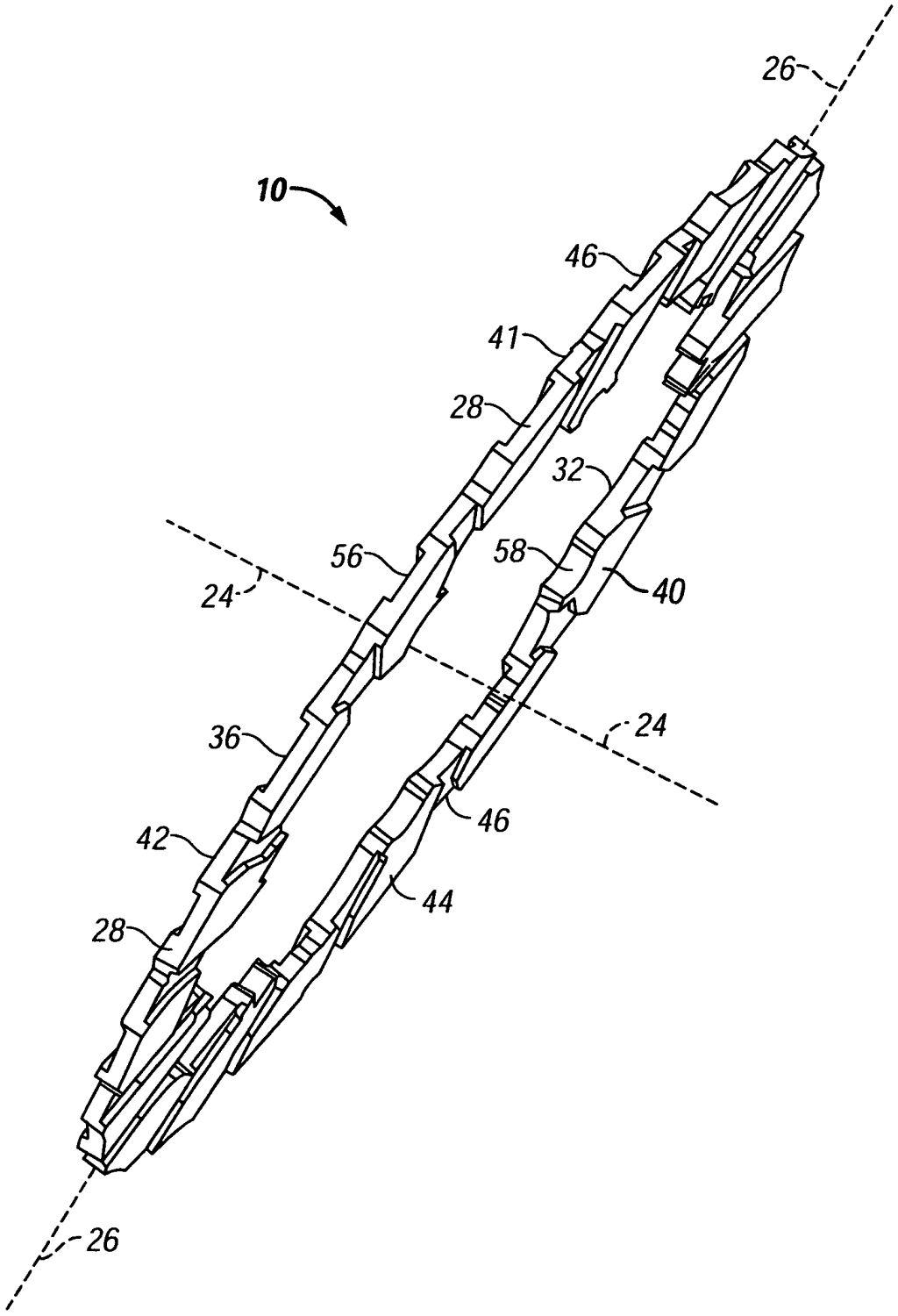

FIG. 2

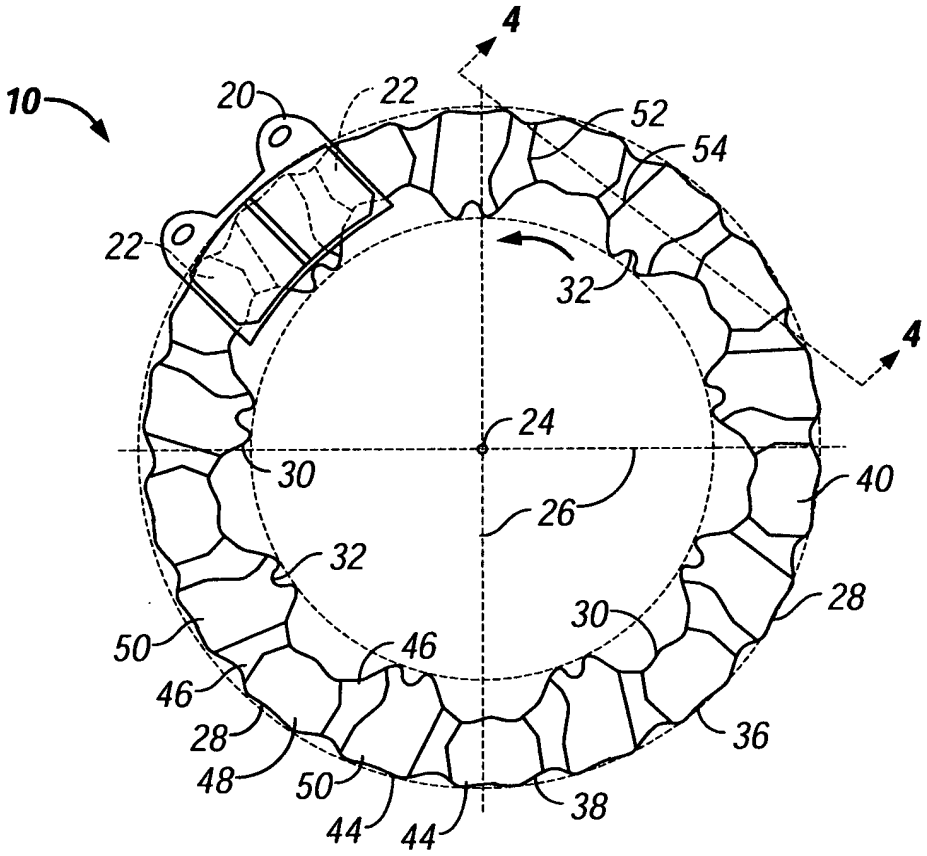
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FIG. 3

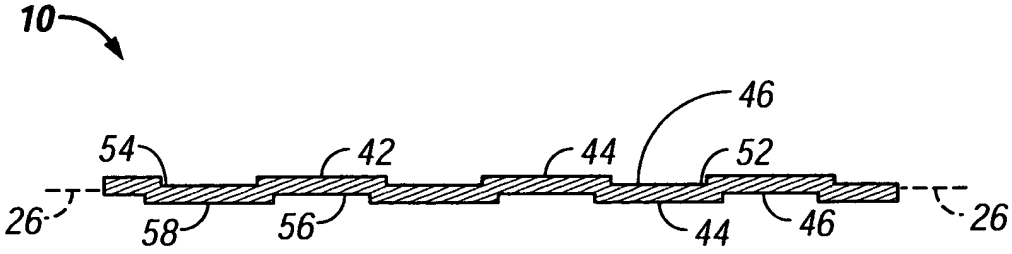
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FIG. 4

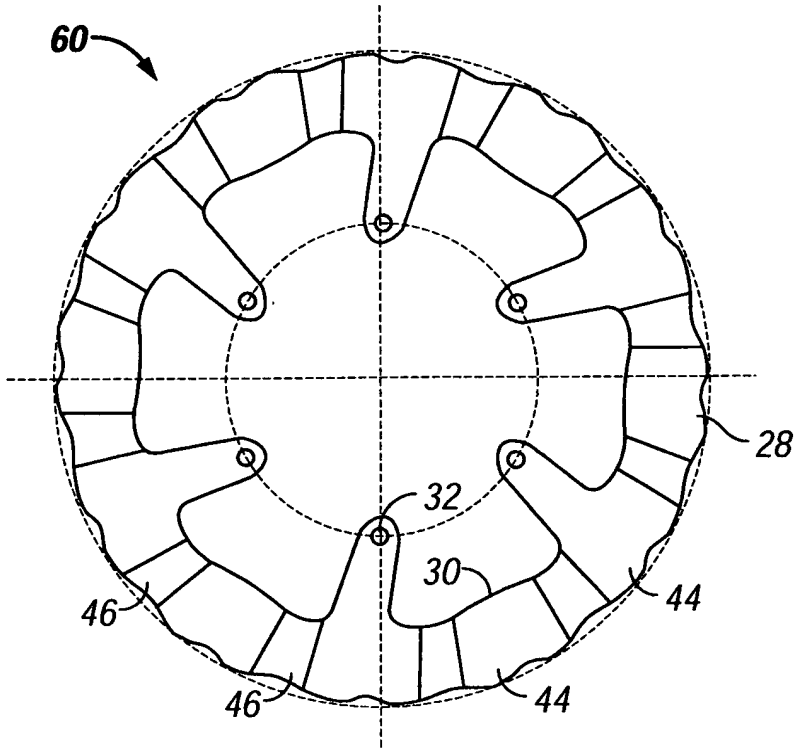

FIG. 5

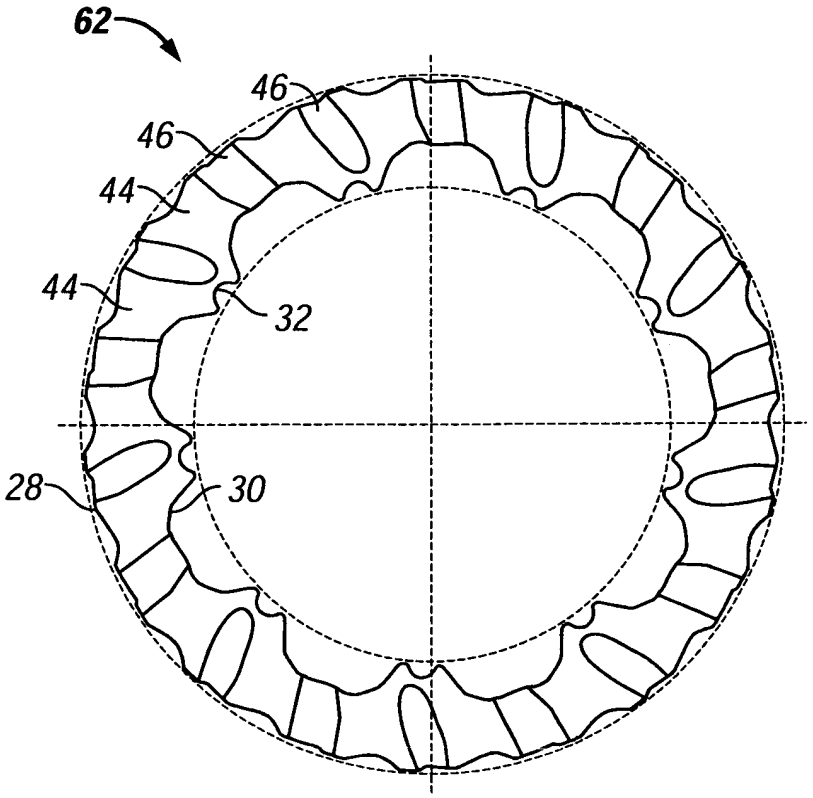

FIG. 6

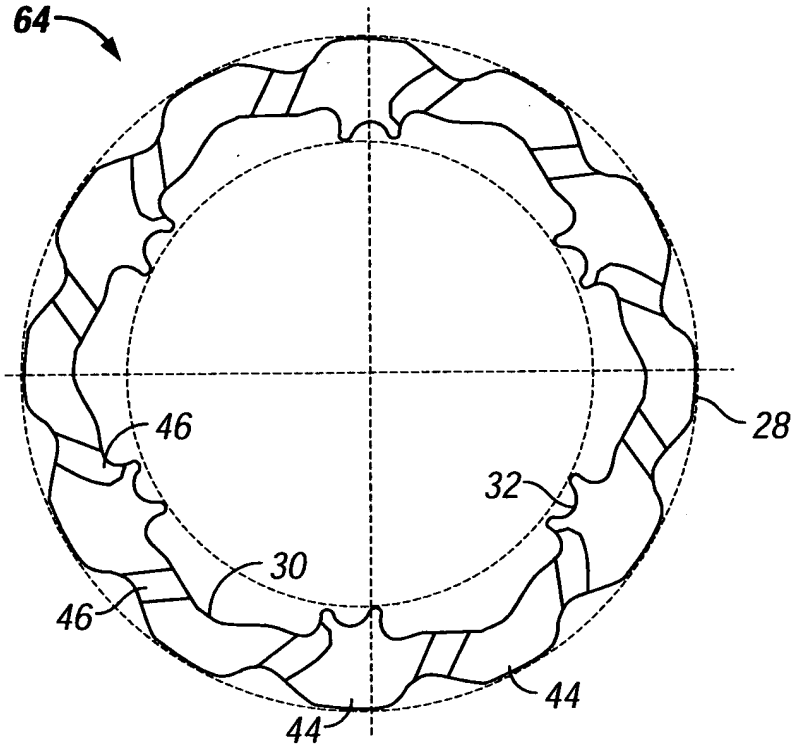

FIG. 7

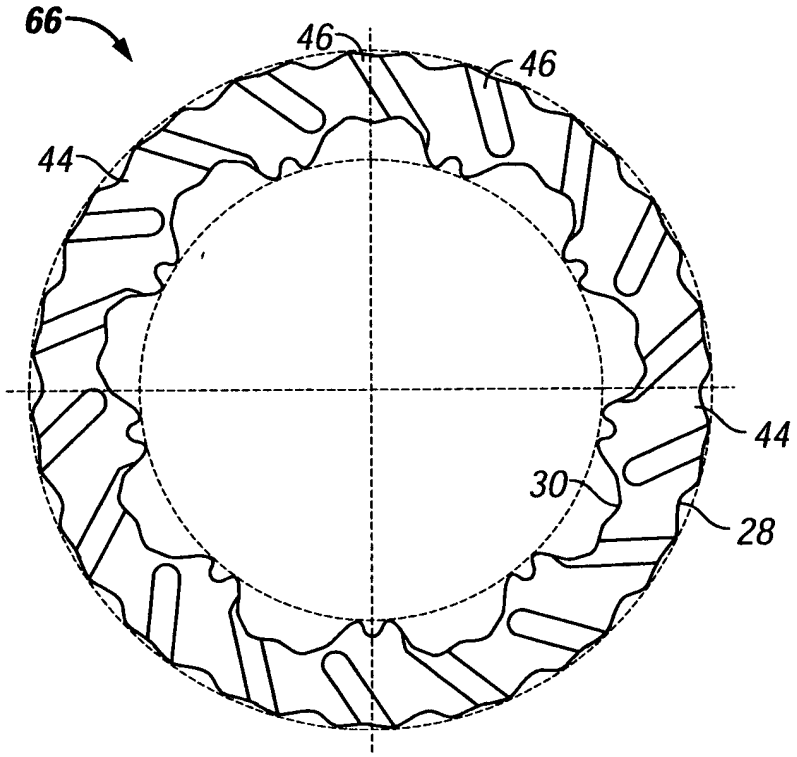

FIG. 8